I. AMENDMENT

In the Claims:

Please cancel claims 1-122 without prejudice and disclaimer and add the following new claims:

B1 Rule 1.126

--~~123~~ 122. (New) A method for preparing a library of regulatory DNA sequences from a cell, the method comprising:

(a) providing a cell nucleus, wherein the nucleus comprises cellular chromatin;

(b) contacting the nucleus with a first enzyme, wherein the first enzyme reacts with accessible regions of cellular chromatin;

(c) deproteinizing the cellular chromatin to generate deproteinized DNA;

(d) contacting the deproteinized DNA with a second enzyme to generate DNA fragments;

(e) contacting the DNA fragments with a population of vector molecules, wherein the vector molecules comprise a first end that is compatible with the first enzyme and a second end that is compatible with the second enzyme, under conditions favorable to ligation of compatible ends; and

(f) selecting polynucleotides comprising a DNA fragment ligated to a vector molecule.

123 122
~~124~~. (New) The method of claim ~~123~~, wherein the cell is selected from the group consisting of animal cells, plant cells and microbial cells.

124 122
~~125~~. (New) The method of claim ~~123~~, wherein the first enzyme is a nuclease.

25 122
~~126~~. (New) The method of claim ~~125~~, wherein the nuclease is DNase I.

126 124
~~127~~. (New) The method of claim ~~125~~, wherein the nuclease is a restriction enzyme.

127 122
~~128~~. (New) The method of claim ~~123~~, wherein the second enzyme is a restriction enzyme.

128 127
~~129~~. (New) The method of claim ~~128~~, wherein the restriction enzyme is Sau3A I.

129 128
~~130~~. (New) The method of claim ~~129~~, wherein the second end of the vector molecule is generated by digestion with BamH I.

130 125
~~131~~. (New) The method of claim ~~126~~, wherein, subsequent to step (b), the DNase I ends are converted to blunt ends.

131 130
~~132~~. (New) The method of claim ~~131~~, wherein the first end of the vector molecule is a blunt end.

132 131
~~133~~. (New) The method of claim ~~132~~, wherein the first end of the vector molecule is generated by digestion with EcoRV or SmaI.

133 122
~~134~~. (New) The method of claim ~~123~~ wherein, during steps (b) – (d), the nucleus is embedded in agarose.

134 122
~~135~~. (New) The method of claim ~~123~~, wherein a plurality of different libraries of regulatory DNA sequences are prepared, wherein each library is obtained from a different cell.

B1

135 134
136. (New) The method of claim 135 wherein, in step (a), nuclei are obtained from cells at different stages of development.

136 134
137. (New) The method of claim 135 wherein, in step (a), nuclei are obtained from cells in different tissues.

137 134
138. (New) The method of claim 135 wherein, in step (a), nuclei are obtained from diseased cells and counterpart normal cells.

138 134
139. (New) The method of claim 135 wherein, in step (a), nuclei are obtained from infected cells and counterpart uninfected cells.

139 134
140. (New) The method of claim 135 wherein, in step (a), nuclei are obtained from cells that express a gene of interest at different levels.

140 122
141. (New) The method of claim 123, wherein a plurality of different libraries of regulatory DNA sequences are prepared and, for each library, a different first enzyme is used.

141 140
142. (New) The method of claim 141, wherein the different libraries are combined.

142
143. (New) A method for isolating a collection of polynucleotides comprising cellular regulatory sequences, wherein the method comprises:

B1

(a) contacting cellular chromatin with a probe, wherein the probe reacts with accessible regions of cellular chromatin;

(b) subsequently fragmenting the cellular chromatin to generate a collection of polynucleotide fragments; and

(c) selectively cloning polynucleotide fragments comprising a site of probe reaction.

143 142
~~144~~. (New) The method of claim ~~143~~, wherein reaction of the probe with cellular chromatin results in polynucleotide cleavage at the site of reaction.

144 142
~~145~~. (New) The method of claim ~~143~~, wherein the cellular chromatin in present in an isolated nucleus.

145 144
~~146~~. (New) The method of claim ~~145~~ wherein, in steps (a) and (b), the isolated nucleus is embedded in agarose.

146 142
~~147~~. (New) The method of claim ~~143~~, wherein the probe is an enzyme.

147 146
~~148~~. (New) The method of claim ~~147~~, wherein the enzyme is a nuclease.

148 147
~~149~~. (New) The method of claim ~~148~~, wherein the nuclease is a restriction enzyme.

149 147
~~150~~. (New) The method of claim ~~148~~, wherein the nuclease is DNase I.

150 142
~~151~~. (New) The method of claim ~~143~~ wherein, in step (b), cellular chromatin is fragmented by restriction enzyme digestion.

B1

151 150
~~152~~. (New) The method of claim ~~151~~, wherein the restriction enzyme is Sau3A1.--

B1 cont'd

Attached is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"